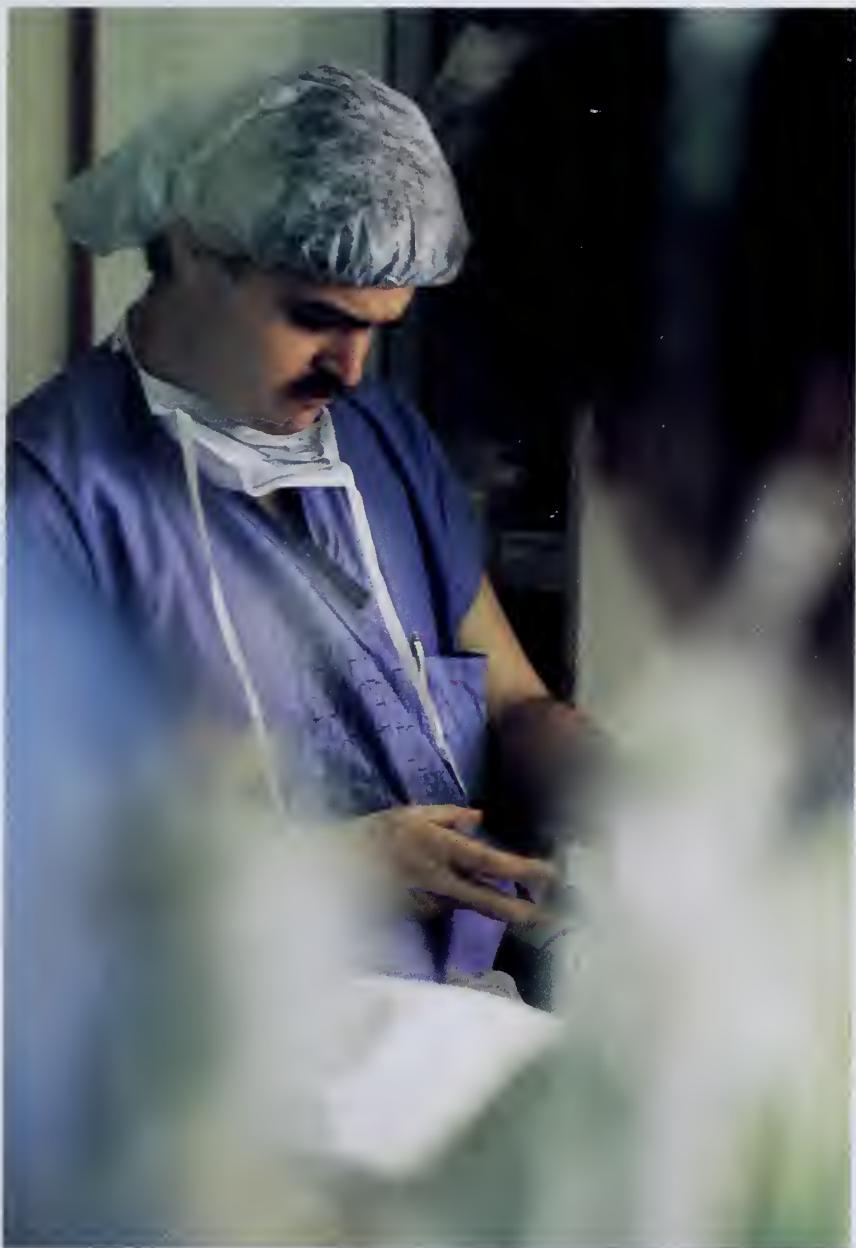


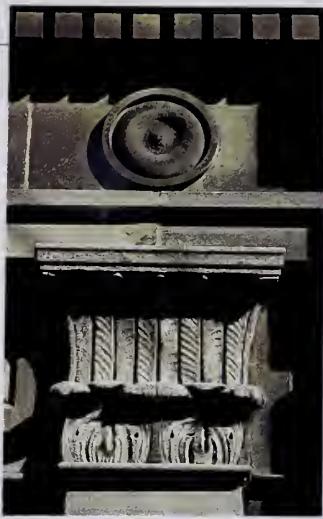


Columbia-Presbyterian
Medical Center
Annual Report 1987

On the cover: The Columbia-Presbyterian Medical Center from the George Washington Bridge, with the new Presbyterian Hospital in the lower right corner of the skyline.

*It was not the physical impact of a man's foot
on the surface of the moon that so awed
and inspired us; it was the idea of doing it
. . . that is also what makes for the greatness of
the Columbia-Presbyterian Medical Center.*





Columbia-Presbyterian Medical Center—An Overview

The Columbia-Presbyterian Medical Center consists of The Presbyterian Hospital and the Columbia University Health Sciences Division, which includes the College of Physicians & Surgeons (P&S), the Schools of Nursing, Public Health, and Dental and Oral Surgery of Columbia University, and allied health programs. Also on campus is the New York State Psychiatric Institute, which is closely affiliated with the Hospital and P&S.

Columbia-Presbyterian, which opened in 1928, was the world's first medical center where leading medical institutions combined their expertise at a single location to accomplish common goals: to provide the highest quality medical care for the sick and injured, to advance knowledge about the cause of illness, to prevent and treat disease and disability, and to train men and women in the professions of medicine, dentistry, nursing, public health, and allied fields.

Countless advancements in medical care have resulted from basic and clinical research at Columbia-Presbyterian Medical Center. In the 1920s, doctors here developed the first practical oxygen tent for treatment of patients with severe heart and lung disease. Two Columbia-Presbyterian researchers shared the Nobel Prize in Medicine for their investigations in the 1940s of the function of healthy and diseased heart and lungs using cardiac catheterization—a technique that has become indispensable to physicians in the diagnosis and treatment of heart and lung disease. Recently, Columbia-Presbyterian became the first medical center to use non-ionizing magnetic resonance imaging (MRI) to depict sodium and phosphorus in living tissue, creating the most detailed images of the location and damage caused by stroke.



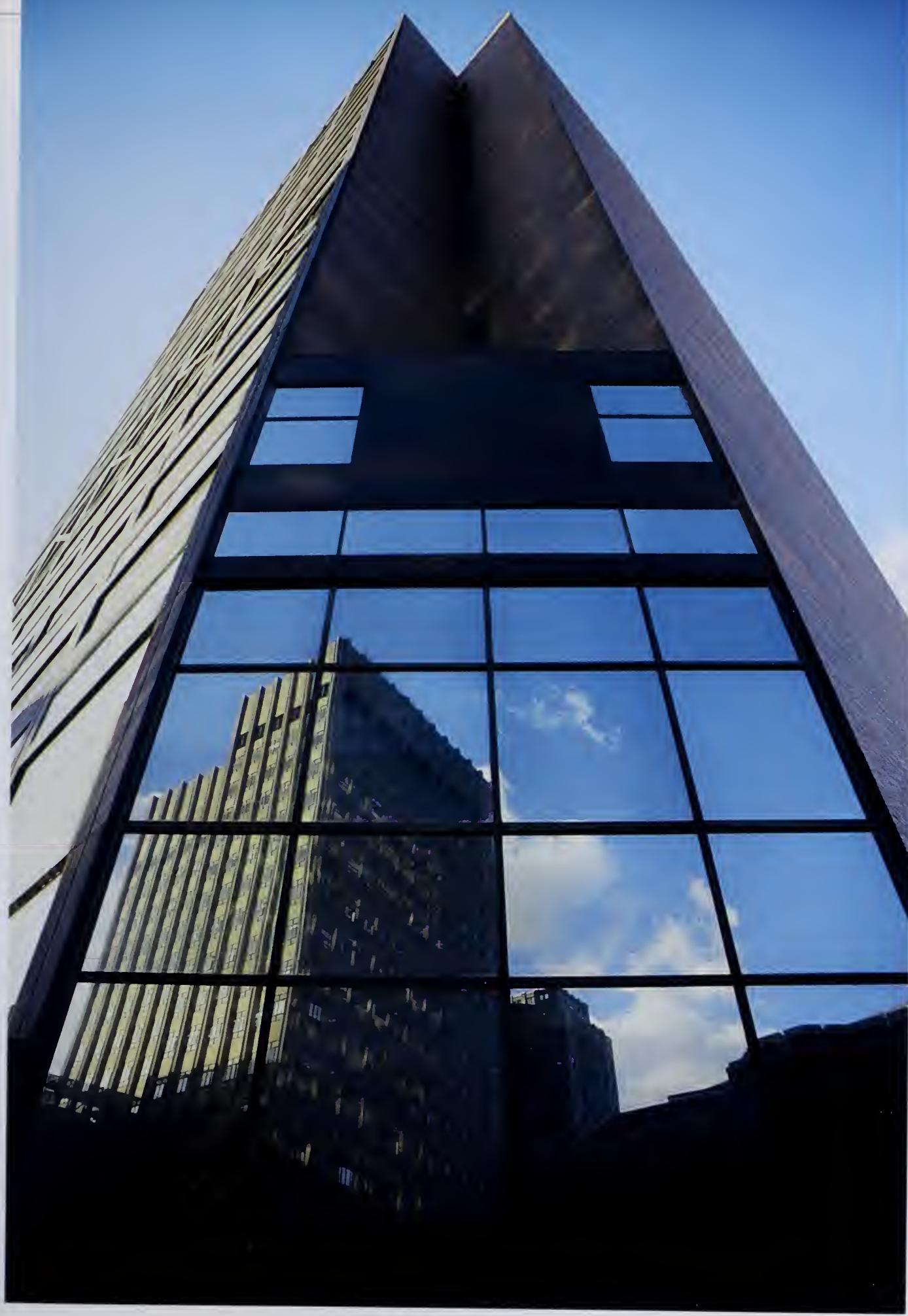


The College of Physicians & Surgeons has long been one of the nation's premier medical schools. It is guided by the principle that medical education is university education; the acquisition of knowledge and skills is important to the medical student, but far more vital is an understanding of the science, the art, and the ethic within which the knowledge and skills are applied. P&S counts among its alumni many of the world's leaders in academic medicine, research, and clinical practice.

Continuing its rich tradition as a leader in clinical care, Columbia-Presbyterian today serves as a major referral center for specialized care, thereby improving access to high-technology treatment while avoiding unnecessary duplication of services. The Regional Perinatal Network, for example, links The Presbyterian Hospital with hospitals throughout the tri-state area. High-risk pre-mature infants are transported to the Hospital in mobile intensive care units and by helicopter each year to take advantage of the Hospital's world-renowned neonatal intensive care unit. The Medical Center also serves as a major referral center for heart transplantation, high-risk maternity care, the management of infectious diseases, stroke, and numerous other disorders.

A major modernization program now under way, which will upgrade all the Hospital's specialty referral and community services, ensures that Columbia-Presbyterian will remain a leader in research, education and clinical care.







The Presbyterian Hospital in the City of New York



The Presbyterian Hospital encompasses all of the individual patient care units and facilities at the Columbia-Presbyterian Medical Center.

The Hospital has an overall capacity of 1,291 beds and 48 bassinets. Its professional staff consists of over 1,300 physicians and dentists, 400 residents and 100 visiting fellows, whose nominations to the staff of the Hospital are made by Columbia University.

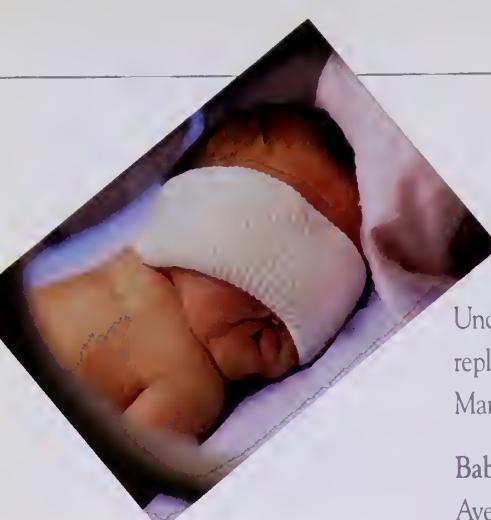
Each year, Presbyterian provides care through some 45,000 admissions to its inpatient facilities and more than 750,000 visits to its group practices, clinics, doctors' offices, and emergency services.

Presbyterian, founded as a general hospital in 1868 by James Lenox, was originally located on the block bounded by Madison and Park Avenues between 70th and 71st Streets. In 1911, The Presbyterian Hospital and the College of Physicians & Surgeons entered into an agreement for coordinating the care of the sick with the education and research programs of the College. This was followed by an alliance agreement in 1922 that led to the establishment of the Medical Center complex, which opened in the fall of 1928 at its present location in Washington Heights. In 1943, Babies Hospital and the Neurological Institute were consolidated with The Presbyterian Hospital, followed in 1945 by the New York Orthopaedic Hospital.

The Hospital's major clinical services include virtually every medical specialty and subspecialty: Anesthesiology, Dentistry, Dermatology, Medicine, Neurological Surgery, Neurology, Obstetrics & Gynecology, Ophthalmology, Orthopedic Surgery, Otolaryngology, Pathology, Pediatrics, Psychiatry, Radiation Oncology, Radiology, Rehabilitation Medicine, Surgery, and Urology.

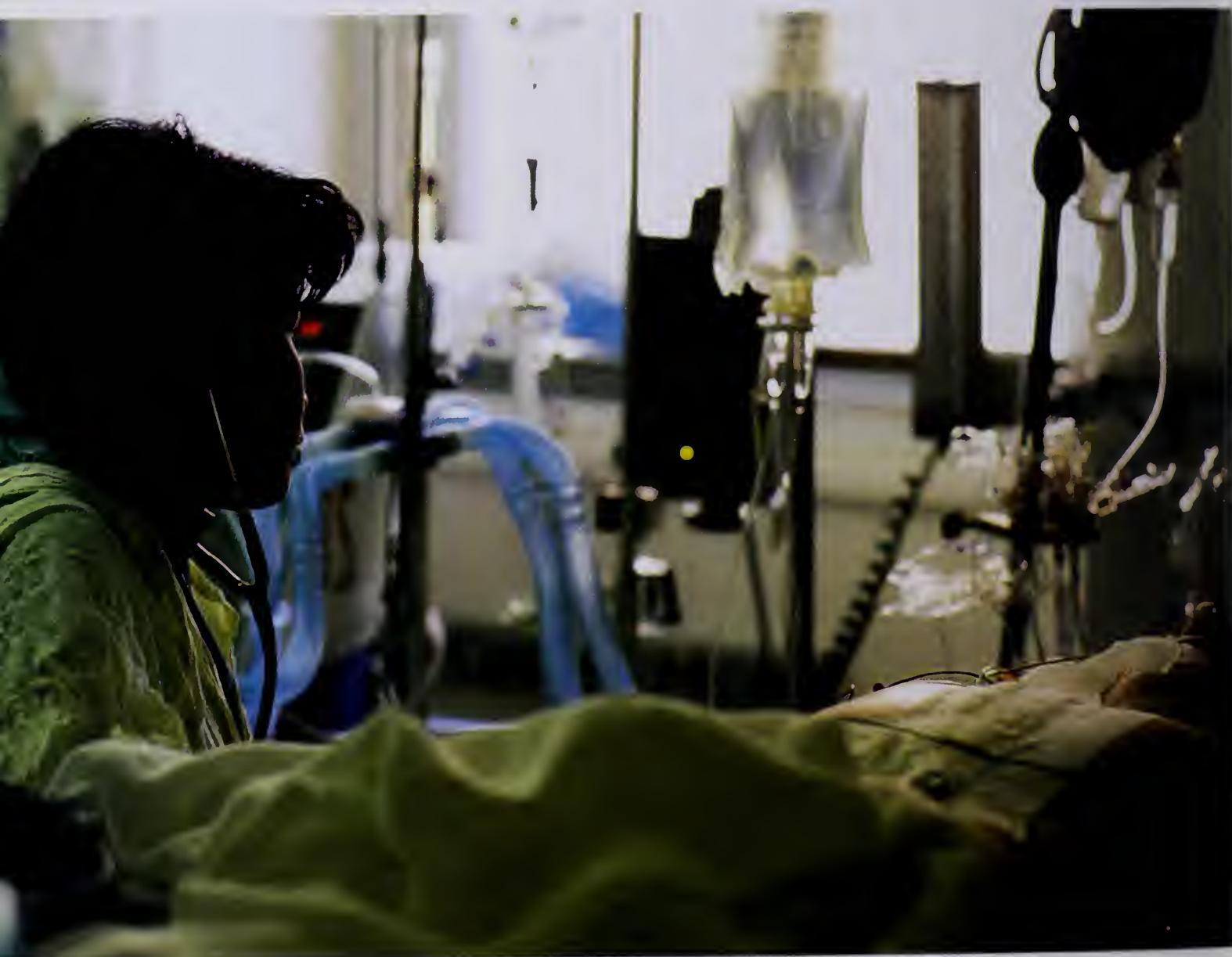
The Presbyterian Hospital Building is the Medical Center's single largest hospital unit, with 507 beds. The inpatient units within it will be replaced by a new facility now under construction.

The Presbyterian Hospital is in the midst of a comprehensive \$496 million program to modernize its specialty referral and community services. Some of the facilities will be extensively renovated, while others will be entirely replaced with newly constructed buildings. The centerpiece of the new construction, the new Presbyterian Hospital, will be just west of Fort Washington Avenue and will include 745 beds, as well as new radiology and operating room suites.

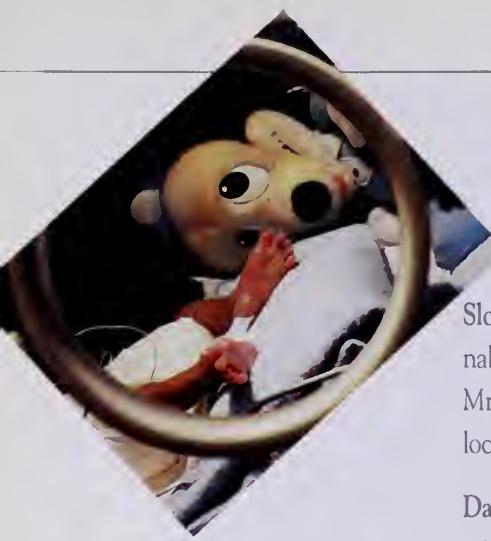


Under the modernization program, the Hospital will relinquish 100 beds on the main campus and replace them with a new 300-bed community hospital—the Allen Pavilion—at the northern tip of Manhattan.

Babies Hospital, The Presbyterian Hospital's Pediatric Service, was founded in 1887 at Lexington Avenue and 55th Street. Babies Hospital, the nation's oldest hospital for children and infants, relocated to the Medical Center in 1928. Babies Hospital provides general medical and surgical care of infants and children up to their late teens, and care for premature babies through a Regional Perinatal Center serving the tri-state area. It contains one of the largest pediatric cardiology and cardiac surgery programs, including heart transplantation, in the country. A new operating suite and children's radiology unit opened in 1987.







Sloane Hospital for Women, The Presbyterian Hospital's Obstetrics and Gynecology Service, originally was built at West 50th Street and Amsterdam Avenue and presented to Columbia University by Mr. and Mrs. William D. Sloane in 1886. Sloane Hospital, which joined Presbyterian in 1928, is located in the Babies Hospital building.

Dana W. Atchley Pavilion, located on the corner of Fort Washington Avenue and 165th Street, contains medical offices and examination rooms for 200 physicians, as well as administrative offices for Hospital management, the Ambulatory Cancer Center, Ambulatory Psoriasis Treatment Center and the Sleep Disorders Center.

Edward S. Harkness Eye Institute, Presbyterian's Ophthalmology Service, opened in 1933. It has 24 beds and complete facilities for the medical and surgical treatment of adults and children with diseases of the eye. In 1969, a new wing was opened for research and outpatient facilities.

Harkness Pavilion, erected when Columbia-Presbyterian Medical Center was established in 1928, has 257 beds for private and semi-private patients from various services.

Neurological Institute of New York, the first nongovernmental hospital in the country for the treatment of nervous system diseases, was founded in 1909. It moved from East 67th Street to the Medical Center as a unit of The Presbyterian Hospital in the late 1920s. The Institute now has beds for neurology and neurosurgery patients, and includes facilities added in 1960 for psychiatric and rehabilitation patients. There also are neuroradiology services, a Stroke Center, Clinical Dystonia Research Center, and the Parkinson's Disease Foundation.

New York Orthopaedic Hospital opened as a dispensary in 1866 largely because of the interest taken in the care of the handicapped by Theodore Roosevelt, father of the President of the same name. The hospital was located on East 59th Street until the 1940s, when it was merged with The Presbyterian Hospital as its Orthopedic Service.

J. Bentley Squier Urological Clinic, the Urology Service of The Presbyterian Hospital, was established in 1928.

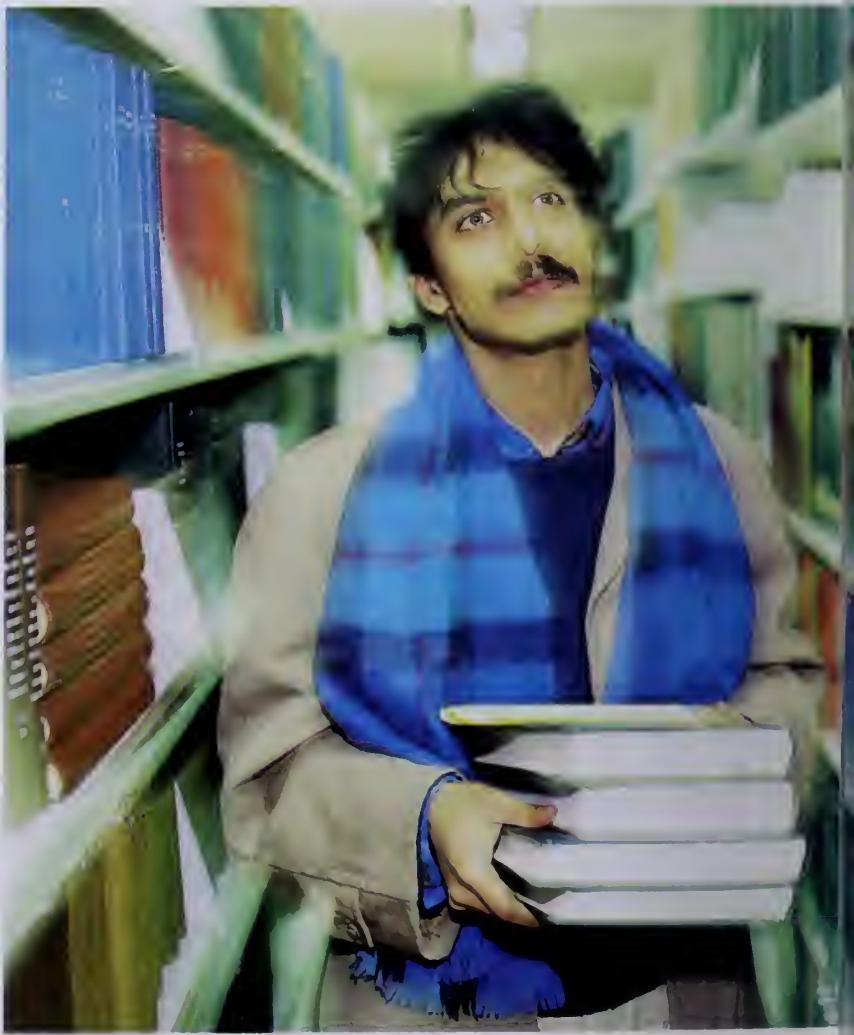
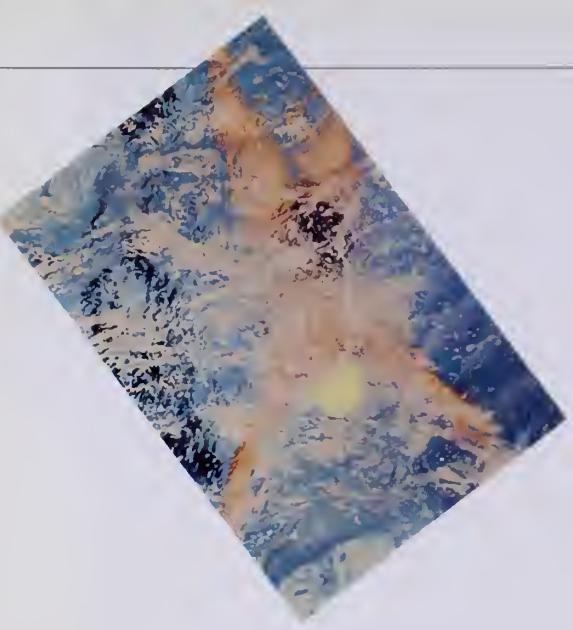
Vanderbilt Clinic was presented to Columbia University by the Vanderbilt family in 1888 and now is the outpatient department for The Presbyterian Hospital.

Edna McConnell Clark School of Nursing, established by The Presbyterian Hospital in 1968, prepares licensed practical nurses (LPNs) to become registered nurses (RNs).

Washington Heights/Inwood Ambulatory Care Network Corporation (ACNC). The ACNC is a program designed to increase the availability of primary care in Washington Heights/Inwood by "homesteading" this medically underserved area with physicians. The ACNC plan calls for the recruitment and establishment of several separate physicians' practices in the local neighborhood.

Columbia-Presbyterian/Eastside, located at 38 East 61st Street, is the largest off-campus practice site. Over 80 dentists and physicians see patients in these modern offices, which opened in 1981. Laboratory and radiology services also are available.





College of Physicians & Surgeons

Columbia University began as King's College, which was founded in 1754 by Royal Grant of George II, King of England, "for the Instruction of Youth in the Learned Languages, and the Liberal Arts and Sciences." The American Revolution interrupted its program, but in 1784 it was reopened as Columbia College. In 1912, the title was changed to Columbia University in the City of New York.

King's College organized a medical faculty in 1767 and was the first institution in the North American Colonies to confer the degree of Doctor of Medicine. In 1814, the medical faculty of Columbia College was merged with the College of Physicians & Surgeons (P&S), which had obtained an independent charter in 1807. In 1860, the College of Physicians & Surgeons became the medical department of Columbia College. The connection was only a nominal one, however, until 1891, when the college was incorporated as an integral part of the University.

Today, P&S occupies a 17-story building on the Medical Center campus. Each floor connects with the services of The Presbyterian Hospital. Adjacent to P&S, the William Black Medical Research Building, a 20-story facility, contains basic and clinical science laboratories for faculty members. The Julius and Armand Hammer Health Sciences Center, which opened in 1976, includes teaching,



library, and research facilities. In conjunction with the City and State of New York, Columbia plans to build New York City's first biotechnology research facility—the Audubon Research Park—which will include university and privately owned research laboratories, as well as ground-floor retail space.



About 600 medical students attend the College of Physicians & Surgeons, which has a total faculty of 2,010 full- and part-time instructors. Through its network of clinical affiliates, more than 1,000 house staff officers currently are in P&S-affiliated postgraduate training programs, including 400 at Presbyterian Hospital.

In addition to 18 clinical departments, which correspond to the Hospital's 18 clinical services, there are seven basic science departments: Anatomy and Cell Biology, Biochemistry and Molecular Biophysics, Genetics and Development, Microbiology, Pathology, Pharmacology, and Physiology and Cellular Biophysics.

School of Dental & Oral Surgery

The School of Dental & Oral Surgery was one of the first dental schools in the nation to become fully integrated with a research university and a world-renowned medical center. The first students were admitted in 1916. The School offers undergraduate instruction in dentistry and dental hygiene, as well as postgraduate courses in the specialties of dentistry and a master's degree in dental hygiene. Joint degree programs are offered in combination with a variety of fields, such as public health and nutrition. Approximately 300 students are enrolled.

School of Nursing

The School of Nursing, a leader in nursing education for more than 90 years, offers programs at the bachelor's and master's degree levels. The graduate program provides specialist training in 12 clinical





majors. The School's emphasis on professional clinical practice prepares students to be skilled practitioners with a strong social awareness, while research, and administrative components in the curriculum are designed to produce future leaders in academic nursing. The School has an enrollment of approximately 350 students.

School of Public Health

The School of Public Health, the only institution of its kind accredited in the metropolitan area, is an integral part of the Faculty of Medicine of Columbia University. The School, which has about 500 students, provides graduate instruction and research opportunities in preventive and administrative medicine, biostatistics, population and family health, tropical medicine, epidemiology, environmental and sociomedical sciences, and in community organization for health services of all types. Joint degree programs are offered with eight other units of Columbia University.

Centers & Institutes

Center for Geriatrics & Gerontology

The Center for Geriatrics & Gerontology develops education, research, and clinical care programs in the field of aging. Depression and dementia among the elderly are of particular interest. The Center, which was established in 1980, emphasizes close cooperation among The Presbyterian Hospital's clinical services, the Schools of Public Health and Nursing, the College of Physicians & Surgeons, and resources for aging within the neighboring community.

Center for Neurobiology & Behavior

Established in 1975, the Center for Neurobiology and Behavior promotes research in neurobiology and teaches neuroscience to students in the College of Physicians & Surgeons and the School of Dental & Oral Surgery.

Center for the Study of Society & Medicine

The Center for the Study of Society & Medicine, which opened in 1982, conducts research into a wide range of areas that affect the health professions. It also works to enrich the teaching and practice of medicine with conceptual and policy insights from the social sciences and humanities.

Comprehensive Cancer Center

The Comprehensive Cancer Center conducts basic science and clinical research in all areas of carcinogenesis. It also provides education throughout the community and within the University on cancer control, diagnosis and prevention. The Center, which opened in 1975, is one of only two such centers in New York City established by the National Cancer Institute.







Comprehensive Sickle Cell Center

The Comprehensive Sickle Cell Center, in operation since 1983, provides specialized care, education and research activities in sickle cell disease. The Center periodically runs genetic counseling, continuing education, and screening programs for the local community.

Irving Center for Clinical Research

The Herbert and Florence Irving Center for Clinical Research furnishes resources for stimulating multidisciplinary, intensive investigation of human disease. It provides unique and substantial opportunities for undergraduate and postgraduate training in clinical investigation.

Gertrude H. Sergievsky Center

The Sergievsky Center, which opened in 1978, conducts studies related to determinants of seizure disorders; the prevalence, antecedents, and consequences of neurodevelopmental disabilities and handicaps, and the origin of congenital defects.

In addition, Sergievsky Center faculty teach at the School of Public Health, the College of Physicians & Surgeons, and Barnard College. The faculty also works to disseminate information to professional organizations, colleges, universities, and communities around the world.

Hughes Medical Institute Program in Molecular Neurobiology

The Hughes Institute Program at the Columbia-Presbyterian Medical Center, in operation since 1984, fosters research and education in molecular neurobiology. It is the only one of ten Hughes Medical Institute Programs in the country devoted to the neurosciences.

International Institute for the Study of Human Reproduction

The Institute, which began in 1965, fosters basic research related to solving the world population problem, provides clinical and social services in the community related to the reproductive health of men and women, and conducts research and education in reproductive science and health. The Institute incorporates two major centers: the Center for Reproductive Sciences and the Center for Population and Family Health. Its International Research and Technical Assistance Unit works with many foreign governments and private organizations toward improved basic health and family planning services for poor people in developing countries. As a division of the School of Public Health, the Center provides academic programs leading to master's and doctoral degrees in population/family planning, maternal and child health, and public health nutrition.



Institute for Cancer Research

Established in 1911, the Institute for Cancer Research conducts basic scientific research in carcinogenesis, biochemistry and molecular biology.

Institute of Human Nutrition

The Institute of Human Nutrition, which was established in 1958, studies human nutrition within three main areas: growth and development, nutritional diseases, and community nutrition. It also participates in the teaching of human nutrition and publishes *Nutrition and Health*, a newsletter for the general public, in conjunction with the School of Public Health.

Center for Psychoanalytic Training & Research

A course of training in the theory and practice of psychoanalytic medicine is offered through the Center and the Department of Psychiatry. The program, a minimum of four years in length, leads to the award of a certificate in Psychoanalysis.

Augustus C. Long Health Sciences Library

Located in the Julius and Armand Hammer Health Sciences Center, the library has nearly 400,000 volumes and a staff of 45. It is one of the largest medical center libraries in the nation. More than 3,400 periodicals are received regularly. The library includes a comprehensive media center equipped with audio-visual materials and equipment, as well as a significant rare book and special collections section. In addition to traditional reference services, the library offers computerized literature searching on several data bases, including MEDLARS. Columbia-Presbyterian Medical Center, together with the Health Sciences Library, is one of four pilot institutions in the nation selected to plan for the development of an Integrated Academic Information Management System.

Related Programs

Continuing Medical Education

Each year, some 14,000 physicians attend P&S's 150 formal CME courses, 250 rounds and conferences, and 100 community hospital programs.

New York State Psychiatric Institute

The Institute, founded around the turn of the century, is maintained by the New York State Office of Mental Health. Through a contractual arrangement, it is affiliated with the College of Physicians & Surgeons. The Institute conducts research into the causes and treatment of psychiatric illness, provides education for mental health professionals, and provides clinical care for patients with psychiatric disorders. The Institute currently maintains 16 major research laboratories, a hospital, and a wide variety of specialized outpatient departments, which provide diagnostic and treatment programs. The Lawrence C. Kolb Research Annex, a 13-story facility dedicated to psychiatric research, was opened in 1982.

Columbia-Presbyterian's concern for health takes many forms—from basic science to community outreach. Yet throughout the array of projects undertaken in patient care, research and teaching, the aim is to provide the best medical care possible. These are just the highlights.

"Seeing" the Inner Ear

Medical Center otolaryngologists made important progress in two areas of hearing research in 1987. First as a result of several years of effort, a revolutionary new microscope for studies of the living inner ear was perfected. This microscope can identify individual cellular elements in the intact ear and measure their minute vibrations to sound. Ultimately this will allow study of the phenomena underlying high frequency hearing loss, which affects millions of aging Americans.

Researchers also have discovered new information about the neural code used in hearing, which is expected to have great significance for the manufacture of improved transducers for use with cochlear implants to restore hearing for the profoundly deaf.

Swallowing disorders are another interest for clinical otolaryngologists, and a multidisciplinary team for management of patients with these disorders has been established, including specialists in radiology, neurology, and speech and hearing.

A number of patients who are unable to wear conventional hearing aids have been successfully implanted with bone-anchored hearing aids. This device holds promise for patients with mixed inner-ear and conductive hearing loss for which there is no successful form of treatment at present.

Fine Needle Biopsies

A centralization that began in pathology in 1986 continued in 1987, and research and patient care capabilities expanded. On various clinical services, fine-needle aspiration biopsies, a method which obviates surgical incision, were performed with increased frequency.

A new, centralized diagnostic electron microscopy lab was processing 20 specimens a month, and the immunocytochemistry lab offered more than 50 special and immunoperoxidase stains. A hematopathology service also is being established.

Major new research programs focused on the pathobiology and diagnosis of

malignant transformation in the immune system; the immunology and biology of AIDS; organ transplantation and xenografts; the mechanisms of hormone action and receptor trafficking; Alzheimer's disease; and fundamental neurobiology.

Computerized instruction brought an exciting new horizon to the pathology course for second-year medical students, while the liver and renal post-graduate courses maintained their national and international reputations for excellence.

Towards Gene Therapy

Medical Center geneticists have demonstrated the feasibility of gene therapy to cure inherited diseases, by successfully introducing a gene for human hemoglobin into a thalassemic mouse—which enabled it to manufacture enough hemoglobin to become normal. Although it will be a long time before such procedures can be used in humans, the work will be a great stimulus to further research.

The same is true of a second project. Researchers have completed the first physical map of a living organism, the bacterium *E. coli*. It locates the benchmarks along the five million base pairs of the chromo-



somes, and will greatly simplify future research on this organism. This success bodes well for efforts at Columbia to map entire human chromosomes. The chromosome involved in Alzheimer's disease and Down's syndrome is just 10 times the size of the mapped *E. coli* chromosome.

Skin Studies

Nineteen eighty-seven saw the reorganization of the Psoriasis and Phototherapy Treatment Center. New psoriasis patient education programs were developed and new patient support groups were started. Specialists in dermatology, psychiatry, otolaryngology, rheumatology, and nutrition contribute to this effort.

A center for the study and treatment of diseases of the nails and hair was established.

By studying adverse reactions to environmental agents, Medical Center dermatologists identified a number of unusual and previously unrecognized allergies: to the topical antibiotic bacitracin and to the sunscreen preparation benzophenone, among others.

Other research in environmental dermatology looked into

the effects of ultraviolet radiation on several processes; for example, the growth and pigment production of human melanocytes in culture.

Laboratory animals are the beneficiaries of another environmental dermatology study, which developed *in vitro* systems for primary irritancy. Researchers in the cosmetics industry, who must conduct federally mandated testing before putting products on the market, are using these test-tube systems in place of animal testing.

All residents in the teaching program spent one to two months studying environmental dermatology, during which they had hands-on experience with patch testing and phototesting. New phototesting equipment was installed in the Vanderbilt Clinic.

In collaborative efforts, scientists are testing the results of photopheresis, a technique developed at Columbia to treat T-cell lymphoma and now being investigated for other immune diseases; they also are checking how the method may affect tolerance to heart tissue grafts between and within species, while engineers are helping to develop instruments to measure the optimal dosages of light.

Other researchers are checking the ability of photopheresis

to inhibit the immune response to specific antigens; to inhibit the sudden and severe onset of systemic lupus erythematosus, and to increase tolerance to same-species skin grafts.

Animal Research

Ensuring the proper use and care of all laboratory animals is one of today's principal concerns for medical centers that are engaged in major research activities.

In the first phase of a new training program at the Columbia-Presbyterian Medical Center, all faculty and research staff members who use lab animals attended a lecture and discussion session that provided an overview of university, state, and federal policies concerning such use.

The veterinary staff was enlarged to broaden consultative services to faculty and research staff, and to provide better preventive and therapeutic medical services.

Nine staff members engaged in animal care were certified by the American Association of Laboratory Animal Science.

The Medical Center's animal care facilities received provisional accreditation from the American Association for Accreditation of Laboratory

Animal Care. A \$500,000 National Institutes of Health grant is going toward renovation and expansion of animal care facilities, animal husbandry, and experimental surgery equipment.

Transplant Frontiers

Surgeons here performed heart transplants on 57 patients last year, with an 80 percent survival rate, making the cardiac transplantation program one of the largest and most successful in the world. Contributing to the success were internists, pediatricians, pathologists, pharmacologists, microbiologists, neurologists, psychiatrists, nurses, and social workers.

Building on the successful renal and cardiac transplantation programs here, clinicians are working toward the goal of a comprehensive transplantation program to meet the needs of patients at a time when the supply of donor organs is limited.

The emphasis of new surgery research and education initiatives has been on oncology, trauma, and critical care, while existing efforts in vascular surgery, endocrinology, and endoscopy have been expanded.

Critical Care

To relieve pressure on main operating rooms, which handle an increasing number of complex surgical procedures that require extensive monitoring and drug therapy, a complete anesthesia service is planned for the Allen Pavilion.

Critical care medicine is an area in which Medical Center anesthesiologists continue to be much involved. Several attending anesthesiologists received certification in this specialty after taking the first test in critical care medicine ever given by the American Board of Anesthesiology.

A transport system has been developed to help move critically ill patients among sections of the Medical Center. New methods of post-operative pain control are being employed, and the pain-relieving effects of inhalation agents were the subject of one of many research projects. Among others were investigations of the effects of cyclosporine on brain opiate receptor binding characteristics and the action of muscle relaxants and narcotics in obese and elderly patients.

Physiologists have joined anesthesiologists in studying the effects of cocaine and alcohol in embryonic development. Anesthesiologists, neurosurgeons, and neurologists are studying the regulation of cere-

bral circulation during anesthesia for neurovascular surgery.

Pediatricians and obstetricians are collaborating on two studies: the regulation of maternal blood pressure, blood-volume, and uterine blood flow; and the function of the renin-angiotensin system in pregnancy.

Infants and Children

A new way to determine that pregnancy is progressing safely and to predict premature onset of labor is likely in the form of sequential measurements of cortisol-releasing hormone. Researchers here have demonstrated that the placenta secretes large amounts of this hormone into the maternal and fetal bloodstreams.

Parasitic infections in children who attend day care centers are the subject of study in pediatric gastroenterology.

Prevention and treatment of child abuse continued to be areas of major interest at the Medical Center, and a grant from the National Center on Child Abuse is supporting a study of parent-child relationships.

Important research on lipids

funded by the National Heart, Lung and Blood Institute is ongoing, as part of the Specialized Center on Research (SCOR) in Atherosclerosis program at the Medical Center.

Two fundraising events generated support for fellowships at Presbyterian's Babies Hospital division, which celebrated its centennial in 1987 with a two-day scientific symposium, reflecting the rich scientific tradition of this unique children's hospital. The symposium was organized by the Alumni of Babies Hospital.

A Children's Cardiovascular Health Center has opened to diagnose and manage children at risk for premature cardiovascular disease. Six new operating rooms were opened at Babies Hospital; they now will handle virtually all pediatric cases.

New techniques have been applied to esophageal pH monitoring in young patients. The hydrogen breath test analyzer has found a new application: assessing problems of sugar malabsorption and bacterial overgrowth in young children. An increasing number of patients have been managed with special nutrition techniques both in the hospital and at home.

Understanding AIDS

The HIV Center for Clinical and Behavioral Studies of AIDS was established in 1987 under the largest single grant ever given by the National Institute of Mental Health. The multi-million dollar, five-year grant established the only such center in the Northeast—one of just three funded by NIMH in the United States. Collaborating on the effort are The New York State Psychiatric Institute, Columbia University College of Physicians & Surgeons, the School of Public Health, Presbyterian Hospital, P&S hospital affiliates, and several city and state agencies.

The AIDS research center will develop and evaluate prevention programs, aimed particularly at educating adolescents and minority groups in schools, community centers, and shelters. It will also assess risk behavior in intravenous drug users, male homosexuals, women, and adolescents; investigate the reciprocal effects of HIV infection and depression, anxiety, neurological changes, cognition, and sexual dysfunction; clarify conditions under which HIV infection is spread

prenatally; and establish the effects of the disease on neurologic development and behavior in infected infants.

A new Division of Clinical and Genetic Epidemiology in Psychiatry is investigating anxiety and affective disorders, using nuclear families, extended pedigrees, and offspring. A second study, involving treated and untreated adults at five sites around the country, aims to understand the rates, risk factors, and clinical course of anxiety and depression. And a molecular geneticist is studying inheritable diseases of the brain.

New support for the theory that manic depression is a heterogeneous disorder, rather than a single entity, was provided by the discovery of a gene linkage on the X-chromosome; a linkage on Chromosome 11 had been found earlier.

Abnormalities in Chromosome 5 may be implicated in schizophrenia, and psychiatrists are studying large Canadian families in which several members are afflicted with the disorder. New pilot funding for young investigators and a post-doctoral training program are encouraging research into schizophrenia.

To make diagnosis consistent with the most recent edition of the American Psychiatric Association's *Diagnostic and*

Statistical Manual of Mental Disorders, developmental work continues on a standardized format for interviewing psychiatric patients and community subjects. A diagnostic interview schedule for children also was written.

Clinical and basic science research efforts in Alzheimer's disease have been expanded.

With funding from the City of New York, a psychiatric researcher conducted the largest national epidemiological survey ever focused on the housing needs, mental health, and substance abuse status of homeless adults.

Psychoanalytic Studies

Anxiety disorders, fantasy, and the outcome of psychoanalysis are the subjects of research by Medical Center psychoanalysts. They conducted two symposia: "Pleasure Beyond the Pleasure Principle: Developmental and Psychoanalytic Concepts of Affect," and "Premenstrual States: The Psychoanalytic/Psychobiologic Interface."

Rehabilitation Medicine

The mechanisms and epidemiology of post-menopausal hot flashes are a significant

research topic by specialists in rehabilitation medicine. Other aspects of body temperature under study include the mechanisms of vertebrate thermoregulation, pharmacology and effects of temperature on microvasculature, regulation of human finger microcirculation, and the role of circulation in biological heat transfer.

Other projects include an evaluation of normal and abnormal states of the autonomic nervous system in the young and the aging, and the neurochemical aspects of Parkinson's disease.

Columbia-Presbyterian's rehabilitation medicine facility was one of the few in New York to receive three-year accreditation from the Commission of Accreditation of Rehabilitation Facilities.

Special Expertise

Urologic surgeons at the Medical Center are becoming increasingly active in bladder replacement, particularly among children. Bladder augmentation and continent urinary diversion also are procedures in which Medical Center clinicians continue to develop special expertise.

Urologists working with cancer patients treated kidney cell carcinoma with alpha and beta interferon and used flow cytometry to determine prostate cancer heterogeneity.

Specialists in infertility and impotence used flow cytometry, along with testes aspiration to determine fertility. Intracorporeal injections of papaverine were used to increase male potency. Surgeons developed techniques to preserve potency by sparing the nerves when removing the prostate gland.

Studies examined regulation and control of heat shock gene transcription; molecular mechanisms of tumor cell progression and of renal growth and regrowth; and genomic changes regulating prostate cancer development.

Many neurological aspects of urology received research attention. These included bladder dysfunction in neurologic disorders and spinal cord injuries as well as surgical enlargement of the bladder to address nerve-related bladder dysfunction. Also studied were the effects of aging on voiding dynamics and behavioral therapy of voiding dysfunction. Computer-assisted analysis of prostatic obstruction was conducted.

Brain, Nerves, Muscles

Children and the elderly are two groups of primary concern in studies conducted by Medical Center neurologists.

Investigators are using modern brain imaging methods to define the brain damage syndromes suffered by children with sickle cell disease. Others have identified two different biochemical abnormalities in Leigh's disease, a devastating brain disease of children.

And among boys with Duchenne muscular dystrophy, experts have found that a protein called nebulin was absent or much diminished in the muscles. The cause and the mechanisms for this defect are important questions under investigation.

Genetics plays a role in a different muscle problem, a new class of diseases caused by abnormalities of mitochondria function. To understand patterns of the disease's inheritance further, researchers have been cloning the genes for subunits of cytochrome c oxidase—one of the enzymes also implicated in Leigh's disease.

Molecular genetics is increasingly important in neurologic research and investigators here are studying inherited diseases of unknown gene product as well as brain tumors, especially those of childhood.

In adults, interferon and local radiation therapy are being evaluated as treatments for primary tumors of the brain. Research has also sug-

gested that mevinolin, an inhibitor of cholesterol synthesis, might be useful in treating tumors. If so, it would be an entirely new mode of therapy.

Studies have shown that physostigmine has beneficial effects on the memory disorder of Alzheimer's disease, an indication that new drugs might be devised to help these patients.

A new Coma Research Center is looking into the diverse causes of persistent tumors, stroke and other forms of vascular damage to the brain, cardiac arrest, hypoglycemia and other metabolic aberrations, and respiratory distress. The ethical problems of resuscitation and intensive care are also being considered.

Epilepsy is becoming better understood from the cellular to the social levels. Computer analysis has been used to understand the firing properties of epileptic brain cells, while epidemiologic studies have traced the relationship between alcoholism and chronic epilepsy, the risk factors for seizures in impoverished areas of the city, and the genetic factors in different forms of epilepsy.

For patients with Parkinsonism, attempts are being made to devise new ways to deliver drugs to affected parts of the



brain, to design more effective drugs, and to evaluate methods of transplanting brain cells.

Neurologic complications are a reality for 80 percent of all AIDS patients. Besides the well-known infections of the brain by parasites, fungi, and bacteria, the HIV virus seems to attack the brain directly and may also affect the spinal cord and peripheral nerves directly. Neurologists have joined the Medical Center-wide research project on the disease.

Complex Operations

The number of neurosurgical procedures increased 10 percent, and among them have been many more complex operations than in the past. Extra specialization has been developed in the treatment of disorders in children, aneurysms and other vascular disorders, and spinal problems. Increased specialization in brain cancer is being developed.

Neurosurgical researchers studied CNS transplantation and regeneration, blood vessel reactions in AVM, and subarachnoid hemorrhage. Endocrinologists worked with neurological surgeons on a clinical pituitary study program. A tumor bank has been established so that tumors can

be cultured and frozen for future studies.

In July, medical researchers from the Soviet Union, Japan, Yugoslavia, and the United States attended a Medical Center conference on surgery of the diencephalic region.

Fine Eye Diagnosis

For more than half the patients undergoing eye surgery at Columbia-Presbyterian, a day surgery center has made overnight hospitalization no longer necessary. An effort is being made to extend this benefit to children, despite their need for general anesthesia.

A new technique using skin electrodes permits diagnostic evaluation of the entire visual system and makes it possible to test a wider range of patients, including children.

The Eye Radiation and Environmental Research Laboratory has become one of just eight facilities in the world with an instrument that performs computerized digital analysis of the lens's slit lamp optical image. A clinical research group devised a method for determining the tilt and decentration of implants, allowing them to correct the malpositioning of the lens that keeps some lens implants from functioning at their best. It is hoped that this technique will lead to improved results in cataract surgery.

Several groups are studying the causes, prevention, and treatment of cataracts, and one study has shown that a particular enzyme may be involved. Other researchers are developing methods for measuring the density and spatial distribution of lens opacification.

Transplantation of retinal epithelial cells may one day be used to treat degenerative diseases of the retina. Cyclosporine was found to facilitate the procedure.

Medical Center ophthalmologists are developing safety standards for exposure of the eyes to cosmic and humanly produced radiation in space.

Lasers are being used experimentally to correct refractive errors of corneal tissue, which one day may make eyeglasses and contact lenses obsolete.

Dentists Prepare for the 21st Century

The standard dental curriculum across the United States hasn't changed much over the past half century, but the School of Dental & Oral Surgery is about to prepare for the 21st century, with the support of a \$1 million grant from the Pew Memorial Trust Foundation. Over the next three years, the School will institute a curriculum that

emphasizes flexible scheduling, more electives, diagnosis and treatment, and a fifth-year, post-doctoral fellowship.

Third-year students are now studying physical diagnosis in a pilot program, while general practice residents have a new dental oncology program.

The past year saw the relocation and enlargement of the Dental Service.

Multiple disciplines are involved in a new research and clinical program in implantology. Arthroscopy has been added to the diagnosis and treatment of temporomandibular articulation disorders. And a school-wide emergency response team has been formed to provide rapid care when a medical emergency occurs in one of the school's clinics.

New Diversity in Primary Care

A new diversity of general medicine practice sites offers access for community patients and opportunities for health services research. The Medical Center has expanded its relationships with a select group of health maintenance organizations. The first Ambulatory Care Network Corporation site opened at Fort Washington Houses. It serves the elderly and includes a clinically trained geriatrician on its staff. A second ACNC site at Nagle

Avenue, dedicated in 1987, was expected to be open to patients early in 1988.

Aided by a grant from the Robert Wood Johnson Foundation, internists and researchers in geriatrics and gerontology began to study the relationship between depression and disability in the elderly. The New York Community Trust provided support for an evaluation of cultural bias in instruments used to assess patients with Alzheimer's disease. A cohort study of Hispanic elderly in the Hospital-based group practice known as AIM—Associates in Internal Medicine—was developed.

The Rockefeller Foundation and Pew Memorial Trust are funding the development of an office of Clinical Public Health at the Medical Center. It will provide education in social, community, and population-based medicine and encourage interdisciplinary activity among medical, dental, and nursing students.

New Antimicrobial Agents

Infectious disease specialists studied several antimicrobial agents. Ciprofloxacin and ofloxacin, members of a new class of antibiotics, were evaluated in patients with multiply-

resistant bacteria. The new drugs have drawn interest because they make it possible to treat complicated infections orally.

Two endocrinology programs at Columbia-Presbyterian are almost unique in this country: the Specialized Center of Research in Osteoporosis and a study of primary hyperparathyroidism. The molecular biology of hormone action at the level of the gene was under study, as was the role of parathyroid hormone in Paget's disease of the bone. A major epidemiological study of Paget's has collected data on 800 patients.

Hypothalamic regulation of pituitary function and management of prolactin-secreting pituitary tumors are being researched. So is the molecular biology of insulin action at sites beyond the insulin receptor.

The structure of a major hCG-immunoreactive component in the urine in pregnancy was determined. HCG's value for screening early pregnancies and for diagnosing and tracking cancer is becoming clearer.

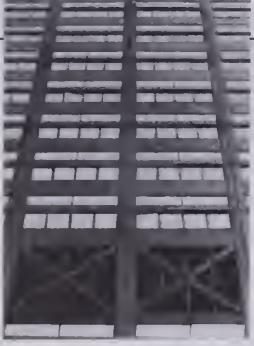
Human cells are being tapped for antibodies that may eventually help fight ragweed allergy. The drug digoxin, used in much the same way digitalis is used, becomes inactivated in some patients' intestines, and immunologists worked to

explain why. They also studied two newly recognized forms of human lysozyme and characterized digitalis-like compounds in toads and snakes, with hopes of finding similar substances in humans.

Clinical Programs in Cardiology Expanded

Cardiologists are applying a variety of advanced techniques to heart disease. Two clinical programs were new or expanded in 1987—one for balloon valvuloplasty to treat narrowing of the aortic and mitral valves, and the second for implantation of automatic defibrillators to treat ventricular tachycardias. Programs in percutaneous balloon angioplasty for treating arterial obstructions and for thrombolysis in acute myocardial infarction were expanded. Heart specialists also used Doppler flow echocardiography to evaluate patients with valvular heart disease.

New research focused on the biochemistry of heart failure and used NMR spectroscopy to investigate myocardial reperfusion injury. Cellular cholesterol metabolism is also being studied.



One year of cardiovascular research training was added to the cardiac fellowship program.

Hemodynamics of heart transplantation, markers of rejection in heart-lung transplants, receptors for nucleotides on macrophages, and angiotensin-converting enzyme were under study. Experimental models of lung injury were the setting for studies of pulmonary blood flow and the effect of positive airway pressure on circulation.

Experiments with a particular chromosome are expected to help in the understanding of significant clinical features of myelogenous leukemia. Other gene research involved therapy for hemoglobin disorders and the diagnosis of sickle cell disease in fetuses.

Cancer specialists striving to understand why the body sometimes resists anticancer drugs are studying ways to modulate the localization of the drugs and the cells' sensitivity to them. Other work is concentrating on the body's own ability to inhibit abnormal cells.

Epidemiological studies of risk factors for colorectal cancer and polyps were continuing, as

were studies of patients who develop a second malignant neoplasm.

Rheumatology researchers believe a recently described T cell subset called the g/d cell may be one of the body's major defenses against cancer. In test tubes, at least, g/d cells are potent killers of tumor cells. It is now known that this type of cell comprises about 10 percent of circulating lymphocytes.

Medical Center rheumatologists also continued to work on the CD4 molecule, which is now known to be the receptor for the AIDS virus.

Nephrology researchers began studying the effect of recombinant human interferon on the anemia of chronic kidney failure.

Specialists in metabolism and nutrition played key roles in the new Cholesterol Education Program, launched by the National Institutes of Health to change medical practice, public awareness, and public health in regard to cholesterol and the prevention of heart disease. In October of 1987 an expert panel issued new guidelines for the treatment of high blood cholesterol in adults, a report that is expected to have considerable impact on medical practice and the incidence of heart disease.

Funded by a grant from NIH, several long-term studies have been launched to explore the effects of different dietary fats and cholesterol on plasma lipids, lipoproteins, and platelets.

Professional control of all nutritional support services—both enteral and parenteral—is a new mission for Medical Center gastroenterologists.

Food and Health

The effects of alcohol, coffee, and cigarette smoke on pregnancy are an important area of research among Medical Center nutritionists. Energy metabolism and plasma volume expansion during maternal undernutrition also were being studied.

Investigation of medium-chain triglycerides, lipid transport disorders, retinoids and retinoid-binding proteins, and opioid peptides was also underway.

Additional studies concern nutrition and oral health, health promotion and disease prevention, and nonsurgical reduction of stomach capacity in obesity.

Studies Focus on Hormones, Cell Components

Both cellular and hormonal activity came under the scrutiny of experts in reproduction.

For the first time, immuno-reactive aromatase in the neurons of regions of the living brain has been isolated and its effect demonstrated.

Other researchers are studying how hormones secreted by the hypothalamus, pituitary gland, and adrenal glands influence reproductive function. The work has shown that one hypothalamic hormone, which controls the pituitary gland's release of "stress" hormones, inhibits pulsatile gonadotropin secretion.

Some subcellular events are regulated by the growth factor, and another study is identifying them.

Scientists are also studying the effects over time of germ cell-specific polypeptides and mRNAs during gonadal development and during the creation of sperm. Similarly, another project is defining how genes influence germ cell development and differentiation. Also under study are the structure of DNA in germ cells and the meiotic characteristics of gonadal tissue from infertile men and women.

More than 20 researchers and clinicians are engaged in work in the Columbia-Presbyterian Comprehensive Cancer Center. The Center now provides administrative or partial financial support to 21 research and clinical units. Several new core facilities, which encourage cooperation, have been added, among them: biological containment, chemical biohazard, preparative biochemistry, DNA protein chemistry, DNA synthesis and automated DNA sequencing, and cytogenetics.

Specialists from a number of disciplines have joined to study colon cancer, the use of recombinant-DNA-produced interferon in the therapy of brain tumors, the biology of brain tumors, molecular carcinogenesis, and the molecular biology of the AIDS virus.

The Center developed the basic science core program for a five-year National Institute of Mental Health grant to the HIV Center for Clinical and Behavioral Studies.

The Medical Center also earned renewed accreditation

from the American College of Surgeons and joined a satellite TV system for professional education in oncology.

Research Intensifies in Neurobiology and Behavior

Researchers in neurobiology and behavior are studying how individuals of the same genetic make-up undergo synaptic and behavioral changes in response to variations in the environment. Researchers have found that changes in ultrastructure, protein phosphorylation, ion channel function, and gene expression all play important parts. Significant progress has been made toward understanding the transition from short-term to long-term memory.

A second major interest has been the cellular and molecular processes that contribute to neuronal development, the creation of synapses, and directed axonal regeneration. The gene for a receptor for the synaptic transmitter serotonin has been cloned and its sequence determined.

Other experts are looking into the organization of the neural circuits that underlie normal and abnormal movements; the neurons involved in epilepsy and schizophrenia; and the cellular properties of the sensory organs that detect flavor and odor. ■



Bridges spanning Fort Washington Avenue and connecting existing CPMC buildings with the new 745-bed hospital building became the most visible symbols of the modernization program's momentum and steady progress in 1987. Physical progress was matched by the realization of health care, research and educational programs that had been in the planning for several years.

Strengthening the Bridge Between Research & Medical Care

The combination of clinical care, research and teaching available at a great academic medical center such as Columbia-Presbyterian yields tremendous progress in finding effective treatment methods and discovering how best to use them.

Thus, the stimulation of efforts in clinical research, along with the development of faculty to conduct that research, also are significant goals for the Medical Center.

In both these areas, significant impetus came from the pledge of \$11 million to establish the Herbert and Florence

Irving Center for Clinical Research, the largest portion of which will go to the creation of assistant professorships for young career researchers. A Herbert and Florence Young Professorship also will be established.

A 14-bed clinical research unit, which has been in operation at the Medical Center since 1975, will be reconstructed as part of the modernization program and will form the physical core of the new Irving Center.

The Irvings' pledge will be the largest single gift ever made to support research at the Columbia-Presbyterian Medical Center.

The Irvings' generosity was acknowledged at Founder's Day ceremonies, where they were presented with Harkness Medallions.

Clinical investigation and young faculty are also the focus of a \$1.5 million grant from the Charles A. Dana Foundation to establish a program for training clinician-investigators in neuroscience. The program will provide assistant professors in the Departments of Neurology, Psychiatry and Neurological Surgery with the opportunity to conduct basic and clinical research under the

guidance of established leaders in their fields.

Another stimulus to young scientists came from a \$1 million bequest from the estate of Mr. Daniel H. Silberberg to support promising young investigators in the Department of Medicine. The Dorothy and Daniel H. Silberberg Assistant Professors will be funded for a maximum of two years, with the goal of providing flexible support while they are establishing independent funding.

To encourage young medical scientists to begin original research into heart disease early in their careers, a gift of \$1.25 million has been made to Columbia by the Warner-Lambert Company. The gift will allow a select group of young physicians interested in the pathogenesis of heart disease to launch careers in research. Two Warner-Lambert Assistant Professors will be selected each year, beginning in 1987, for three-year terms, renewable for three years.

The Aaron Diamond Foundation has granted more than \$1 million over the next three years to support studies of four young researchers in the cause and development of Alzheimer's disease. The grant

underscores the need for basic research in this disease and helps to consolidate the work of a number of scientists and clinicians at the Medical Center who are studying various aspects of the subject.

A fellowship to encourage research into the social and ethical aspects of medicine, especially among junior faculty, has been created by a gift of \$150,000 from the Samuel and May Rudin Foundation, in honor of Mrs. May Rudin's 90th birthday. The May Rudin Fellowships will allow physicians to pursue research projects in the social and cultural aspects of medicine and health care and enable predoctoral and postdoctoral scholars to explore topics in social medicine, issues that are not always encompassed in the crowded medical school curriculum.

Several ongoing clinical research trials that are being conducted by Columbia-Presbyterian physicians are expected to yield important results. For example, neurologists at the Neurological Institute are participating in a nationwide NIH study to test the effects of two drugs in slow-

ing the progress of Parkinson's disease. CPMC is the only medical center in New York City taking part in the study. CPMC neurologists and neurosurgeons also are involved in a major national study to determine if a common operation, the carotid endarterectomy, is any more effective than aspirin in preventing stroke. The Asymptomatic Carotid Atherosclerosis Study (ACAS) is a five-year NIH study involving 1,500 patients across the country with a significant atherosclerotic narrowing of the carotid artery that supplies blood to the brain.

In 1987, the Medical Center's outstanding Stroke Center made front-page news during the summer when New York City Mayor Edward I. Koch was admitted to Presbyterian Hospital. CPMC has one of the largest stroke centers in the world, and also has the most advanced instruments, including a Magnetic Resonance Imaging scanner, which can detect the slightest damage both to major arteries and small vessels.

One more example of clinical research illustrates the importance of these trials to individual patients and society. CPMC is one of 138 hospitals at 27 centers in the United

States, Canada and Sweden that are enrolling 5,000 patients in the first large-scale trial to determine whether treatment with antiarrhythmic drugs will prevent sudden cardiac death, which kills some 400,000 Americans every year. The Cardiac Arrhythmia Suppression Trial (CAST) is funded by the National Heart, Lung and Blood Institute.

Bridges to the Neighboring Community

Washington Heights/Inwood, the Medical Center's local neighborhood, had been cited by the federal government as a medically underserved area, following the closing of five community hospitals over a period of 20 years. The Ambulatory Care Network Corporation (ACNC) was developed by The Presbyterian Hospital in cooperation with the New York State Department of Health as a demonstration project, in response to this crisis. Its purpose is to establish primary care practices in the community. The first ACNC facility opened at Fort Washington Houses, a congregate housing facility for seniors, early in 1987, and is proving effective in helping to ease the shortage

of geriatric medical services in northern Manhattan.

Ribbon-cutting ceremonies were held in the fall for a second ACNC office located on Nagle Avenue. This is a full-service facility that will feature a team of physicians and other health professionals specializing in internal medicine, obstetrics/gynecology, and pediatrics, as well as dentistry, and brings medical care and health education to all family members.

At the ribbon-cutting, New York State Health Commissioner David Axelrod said, "I am delighted to be here to commemorate what I think is one of the most significant events that has taken place in all of New York City in recent years."

The Allen Pavilion, the Medical Center's new community hospital located at the northern tip of Manhattan, also is part of the effort to augment scarce medical service's in Washington Heights/Inwood. The 300-bed hospital is scheduled to open in 1988.

Health promotion and disease prevention were the focus of an ambitious program offered at all ten area senior centers in Washington Heights/Inwood through the generosity of the New York Foundation, which helped support the program for its first three years.

A series of lectures on health-related topics also was developed in conjunction with the Medical Center's midtown offices, Columbia-Presbyterian Eastside. Topics included smoking cessation and stress management, skin diseases, children's eating disorders, AIDS, breast cancer prevention and the value of periodic health examinations. At a time when many people are keenly interested in health-related issues, these lectures are presenting important and accurate information. These activities will be expanded in 1988 at Eastside and in the Medical Center community.

Endowed Chairs

The importance of stable support for senior faculty was also recognized by the establishment of new endowed professorships. The Robert F. Loeb Professorship in Medicine, honoring one of the Medical Center's most eminent clinicians and teachers, was awarded to Dr. Qais Al-Awqati, an international leader in nephrology research. A professorship in Surgery was established to honor the celebrated Dr. George H. Humphreys II;

the first recipient of the Humphreys professorship is Dr. Henry M. Spotnitz, cardiac and thoracic surgeon with research interests in cardiovascular surgery. An endowed professorship in Medicine and a lectureship were established in recognition of the contributions of Dr. Richard Stock, distinguished internist, Columbia alumnus and long-time faculty member. The endowment was funded by a \$1.5 million grant from the Annie Laurie Aitken Charitable Trust, with additional support from the Charles A. Dana Foundation.

Forty members of the Department of Dermatology have contributed funds to make possible the Carl Truman Nelson Professorship in Dermatology. The chair is named in honor of the chairman of the department from 1951 to 1972 and pioneer in the use of cortisone in treating pemphigus, a previously-fatal skin disease.

Celebrating 100 Years

Babies Hospital, the nation's first hospital to treat sick infants, now part of Presbyterian Hospital, began to celebrate its centennial year in 1987. Perhaps the best birthday present was the opening of a new four-story, \$18.8 million addition that features fully

modern operating rooms, imaging equipment and many amenities that provide a comfortable environment for children and their families. The new ORs enable families to remain with their children until anesthesia is administered and to rejoin them immediately following surgery. The entire facility is designed to provide genuinely family-centered care for children.

Babies Hospital also was cited in the journal *Pediatrics* for the gentle method of delivering oxygen to premature infants in respiratory distress, which was developed at Columbia-Presbyterian Medical Center and is used in the Babies Hospital Neonatal Intensive Care Unit. The method has been shown to prevent chronic respiratory disease in premature infants more effectively than methods used at any of the other North American teaching hospitals in this study.

Prevention of future heart disease is the focus of the new Children's Cardiovascular Health Program. With support of the Donner Foundation, the program follows children considered at-risk for heart disease, and monitors diet, exercise and

other health factors and indicators over their lifetimes. The program aims to help individuals and to generate information that will help identify and reduce cardiovascular risk factors in children.

Preparing for the Future

In 1986, Presbyterian formally affiliated with many of the nation's most prestigious academic medical centers by becoming a shareholder in the 800-member Voluntary Hospitals of America (VHA), and a founding member of VHA Metro New York, a cooperative, regional network of independently operated hospitals. In addition to helping to improve the quality and contain the cost of health care through cooperative programs, one purpose for forming VHA was to promote health awareness regionally and nationwide. To that end, planning began in 1987 for CountDown USA, a nationwide event to be held in spring 1988 to focus on the importance of cholesterol control in the prevention of heart disease. The Medical Center will have a significant role in the event in the New York metropolitan area and nationally, and is sponsoring a related program for employees and stu-

dents, with the support of the General Foods Fund.

The transplantation program is expected to expand in 1988, to include liver and bone marrow transplants. CPMC will become the premier transplant center in the region, offering heart, heart-lung, kidney, cornea, bone, bone marrow and liver transplants at a single center. The liver and bone marrow programs are especially unusual in that they will be offered through a consortium of medical centers. The heart transplantation program at CPMC, ten years old in 1987, now is the third largest in the nation.

Biotechnology Plans Proceed

A significant step toward future development in biotechnology came with the signing of a formal agreement between Columbia University and state and local officials for funding and construction of the first university-industry research facility in New York City. Dedicated to commercial development of biomedical technology, the building will be the first in the creation of the Audubon Research Park, just east of the Medical Center. The agreement formalized a proposal to

construct a four-story, \$22 million building, in which 40 percent of the space will be devoted to new start-up companies.

Other Divisions

Important changes took place in other Medical Center Divisions. The Pew Charitable Trust awarded \$1 million to the School of Dental and Oral Surgery to support the first fundamental change in the American dental curriculum in 60 years. Five other dental schools received similar but smaller grants. One significant revision of the curriculum will be an increased emphasis on the medical aspects of dental care, particularly to meet the more complex dental care and health needs of the growing elderly population. The most significant previous change in the nation's dental education followed the report of a study by Dr. William J. Geis of Columbia University, in 1926.

The School of Public Health received a \$400,000 grant from the Pew Charitable Trust and the Rockefeller Foundation to create a program of "clinical public health" that will provide closer links between public health and medicine. The goal is to increase the number of medical, dental and nursing

students at Columbia who will seek joint clinical and public health careers. A clinical health track will be created in each of the health sciences schools. As part of the program, all the schools will be engaged in providing ambulatory care for people in the Washington Heights/Inwood neighborhood.

Typical of the broadening experience of health professionals in training today is the international externship program established by a \$105,000 grant from the Aaron Diamond Foundation. Under the grant, medical and nursing students are working with human rights groups around the world to bring medical services to those who have been excluded from the health care system for political or ethnic reasons. Among the countries in which the students are working, for which they will receive academic credit, are Mali, Mozambique, Guinea, Thailand, Pakistan, Central America and Alaska.

Centers of Excellence

Specialized centers of excellence in research and practice have become a hallmark of the Medical Center in recent years, and 1988 saw the establishment

or strengthening of these centers in several significant areas.

The Howard Hughes Institute Program in Molecular Neurobiology was established in 1984, one of the ten Hughes Institute Programs in the country and the only one in the neurosciences. In 1986, the Institute expanded to include structural biology, and in 1988 it broadened its scope to include biochemistry and microbiology.

The National Resource Center for Children in Poverty, established with planning grants from the Ford Foundation and the Rockefeller Corporation, is the only one of its kind in the nation. It will serve as an information and resource center for those running programs and making policy in the areas of child health and maternity care, social support and early childhood education. The Center will develop an information bank and a program of communications aimed at bridging the gap between applied research, policies and program planning. Crucial to the Center's mission is the need to uphold the social and cultural integrity of the family, particularly among the poor, for whom economic and social stresses threaten their ability to nurture their children in a

healthy and supportive environment.

The Muscular Dystrophy Foundation has established a center for the study and clinical care of patients with amyotrophic lateral sclerosis (ALS). The Center will focus on fundamental research, evaluation of new therapies, and patient care.

Forming a Bridge to a Troubled Society

AIDS continued to take a heavy toll; in 1987 it was the leading cause of death among people aged 25-44 in the United States. In 1987 the Medical Center, through the New York State Psychiatric Institute, received the largest single grant ever made by the National Institute of Mental Health for research related to AIDS—\$13.6 million in direct costs—to establish the HIV Center for Clinical and Behavioral Studies, one of only three such centers in the country and the only one in the northeast. The center will study the psychiatric and neurological aspects of all stages of infection by human immunodeficiency virus. One focus will be prevention in high-risk groups. ■

The Campaign for the Columbia-Presbyterian Medical Center has raised \$193 million toward a sweeping revitalization program to ensure that the Medical Center's standards of excellence in patient care, biomedical research and education are maintained now and into the 21st century.

To date, the Campaign has raised more than \$145 million for Columbia University's Health Science Division for endowment, research and education programs and nearly \$48 million for The Presbyterian Hospital for construction, medical programs and ongoing needs of the hospital. The Columbia-Presbyterian Medical Center greatly appreciates the many generous gifts from individuals, corporations and foundations.

Much has been accomplished; much remains to be done.

PROGRESS TOWARD OUR GOALS

Construction

- Construction on the new 745-bed hospital building is progressing rapidly, and is scheduled for completion in fall 1988. The building will feature state-of-the-art facilities and technologies, and will be ca-

pable of serving patients with the most complex medical problems. Together with extensive renovations of existing structures, the new building will help reorganize and streamline patient care delivery at the Medical Center site.

- The Allen Pavilion, the new 300-bed community hospital, is nearing completion at 220th Street and Broadway. It will provide cost-effective, comprehensive care to northern Manhattan residents, and will strengthen the Medical Center's commitment to meet the medical needs of the community.
- Half-century-old research laboratories and teaching facilities are being expanded and renovated to meet the needs of today's medical scientists and to accommodate state-of-the-art technology.
- A new student center is being created to provide health sciences students with facilities they need for recreation and relaxation.

Endowment

- Two new endowed professorships in the Department of Medicine, one in the Department of Surgery and one in the

Department of Pediatrics have been established. To meet our Campaign goals, an additional 25 endowed professorships will be created through the Medical Center to ensure our ability to attract and retain the best physicians and scientists.

- Endowments have been created for two new junior faculty positions in the Department of Medicine. The Campaign goals include the endowment of 25 more junior faculty positions to reduce the financial hardships for talented young medical scientists who seek academic careers.
- Endowed funds for student assistance are being increased so that scholarships, loans and fellowships will be available to continue attracting the future leaders of the health professions.
- New research programs are being endowed to ensure that the Medical Center's productivity and reputation for excellence will endure.

James Lenox Society

- Established to continue the legacy of James Lenox, founder of The Presbyterian Hospital, the Lenox Society is a group of generous donors committed to the growth and development of the Hospital and, in the words of its founder, to ensure medi-

cal care "for the poor of New York without regard to race, creed, or color." The leadership gifts of the Lenox Society ensure the tenets on which The Presbyterian Hospital was created and enable donors to participate in many Hospital events and activities.

Founder's Day

On October 20, 1987, Columbia-Presbyterian Medical Center celebrated its second Founder's Day, an event which proclaimed the Medical Center's commitment to its community and called attention to the role private philanthropy has played in the creation and sustenance of the Medical Center. The events included the laying of the cornerstone at the Allen Pavilion and the ceremonial ribbon-cutting at the Ambulatory Care Network Corporation (ACNC) practice site. The ACNC is a demonstration project authorized by the New York State Department of Health and sponsored by The Presbyterian Hospital.

It offers primary care medical services to the residents of Washington Heights/Inwood, a medically underserved area. CPMC donors, friends, faculty, staff and students also gathered to learn of the current state of The Presbyterian Hospital and

of Columbia University's Health Sciences Division, and to celebrate the philanthropic legacy of CPMC founder Edward S. Harkness by honoring the donors of a landmark leadership gift.

Harkness Medallions Awarded

The prestigious Harkness Medallions were presented to Mr. and Mrs. Herbert Irving, for their magnificent \$11 million endowment to establish the Herbert and Florence Irving Center for Clinical Research and to create the Herbert and Florence Irving Professorship at the Columbia-Presbyterian Medical Center.

The Herbert and Florence Irving Center for Clinical Research will ensure the continuation of many research programs for which CPMC has gained world-wide recognition and will provide resources for promising young physician-scientists interested in an academic medical career. The Irving Professorship, to be held by the Center's Director, will ensure funds to continue the research, educational and medical care programs required of a faculty leadership position. ■

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The Presbyterian Hospital Financial and Statistical Review*

Statements of Revenues and Expenses and Changes in Unrestricted Fund Balances for the Years Ended December 31, 1987 and 1986

	(in thousands)	
	1987	1986
Operating Revenues:		
Patient service revenues	\$395,117	\$380,196
Allowances and uncollectible accounts	(85,480)	(88,005)
Net patient service revenues	309,637	292,191
Other services	19,560	18,138
Transfers from specific purpose funds	5,295	4,699
Total operating revenues	334,492	315,028
Operating Expenses:		
Salaries and related fringe benefits	217,739	202,394
Supplies and other expenses	112,442	99,945
Depreciation	20,853	20,924
Total operating expenses	351,034	323,263
Loss From Operations	(16,542)	(8,235)
Non-operating Revenues:		
Investment income	4,831	5,651
Legacies and contributions	3,282	2,094
Realized net gain on sales of investments	793	1,027
Total non-operating revenues	8,906	8,772
Revenues (Under) Over Expenses Before Extraordinary Item	(7,636)	537
Extraordinary Item—Loss on refunding of long-term debt, net of third-party reimbursement benefit.	(4,833)	
Revenues (Under) Over Expenses	(12,469)	537
Fund Balance, January 1	152,857	151,040
Transfers From Restricted Funds—Additions to property, plant and equipment	26,670	1,280
Fund Balance, December 31	\$167,058	\$152,857

Inpatient Statistics	1987		1986	
	Adult Pediatric	Newborn Nursery	Adult Pediatric	Newborn Nursery
Average bed complement	1,273	59	1,279	59
Patient days	410,453	22,714	410,538	21,322
Admissions	44,081	4,898	44,248	4,409
Average length of stay	9.26	4.85	9.25	5.08
Outpatient Statistics				1987
Number of visits:				
Medicaid				238,618
Medicare				66,597
Blue Cross				17,595
Self pay				145,900
Personnel and dependents				19,047
Total				487,757
Doctors' offices				285,377
Grand Total				773,134

*A copy of the last financial report filed with the Department of State may be obtained by writing to New York State, Department of State, Office of Charities Registration, Albany, N.Y. 12231 or the Finance Department, The Presbyterian Hospital, Columbia-Presbyterian Medical Center, New York, N.Y. 10032-3784.

Columbia University Health Sciences Division 1985-1986 Highlights

	(in thousands)
Academic Expenditures:	
College of Physicians and Surgeons	\$206,342
School of Dental and Oral Surgery	8,908
School of Nursing	2,231
School of Public Health	12,101
	<hr/> 229,582
Operating Expenditures:	
Library	1,096
Physical Plant and Utilities	6,594
Building and Equipment Maintenance	1,732
Custodial Services	1,851
Security	1,698
	<hr/> 12,791
	242,373
Asset Accounts*	
Gifts and Receipts Balance	
College of Physicians and Surgeons	26,278
School of Dental and Oral Surgery	1,122
School of Nursing	951
School of Public Health	2,433
	<hr/> 30,784
Endowment Principal	
College of Physicians and Surgeons	139,924
School of Dental and Oral Surgery	3,951
School of Nursing	1,679
School of Public Health	993
	<hr/> 146,547
Quasi Endowments	
College of Physicians and Surgeons	56,576
School of Dental and Oral Surgery	77
School of Nursing	3,292
School of Public Health	7,605
	<hr/> 67,550
	244,881
Number of Students	
Medical School	612
Other Faculty of Medicine Programs	181
School of Public Health	514
School of Nursing	368
School of Dental and Oral Surgery	310
	<hr/> 1,985
Full-time Faculty	
College of Physicians and Surgeons	901
School of Dental and Oral Surgery	43
School of Nursing	28
School of Public Health	63
	<hr/> 1,035

*Includes funds in Columbia University



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Mieczyslaw Finster, M.D.
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 Rene Ramirez-A, M.D.
 Lloyd Tinianow, M.D.

Pharmacology

Full Professional Pharmacologist

Brian F. Hoffman, M.D.

Psychiatry

Director of Service

Herbert Pardes, M.D.

Attending Psychiatrists

Anne E. Bernstein, M.D.
 Hector Bird, M.D.
 James L. Curtis, M.D.
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Associate

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Full Professional Psychologists
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Heino F. Meyer-Bahlburg, Ph.D.

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Wilma Rosen, Ph.D.
Gail A. Wasserman, Ph.D.

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 Eric J. Hall, Ph.D.
 Edward L. Nickoloff, Sc.D.

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 Theodore Wang, Ph.D.

Assistant Professional Chemist
 In K. Mun, Ph.D.

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 Karen S. Fountain, M.D.
 Ritsuko Komaki, M.D.

Assistant Radiation Oncologist
 Paul R. Gliedman, M.D.

Full Professional Radiation Biologist and Biophysicist
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Full Professional Biophysicist
 Harold H. Rossi, Ph.D.

Associate Professional Physicist
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Assistant Professional Physicists
 Mary K. Martel, Ph.D.
 Cheng Shie Wuu, Ph.D.

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Director of Service
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Attending Rehabilitation Physicians
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 Stanley J. Myers, M.D.

Assistant Attending Rehabilitation Physicians
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 Antonio Cocchiarella, M.D.
 Francis J. Foca, M.D.
 Michael Hajdu, M.D.
 Damyanti G. Moorjani, M.D.
 Lucille Tsu Pai, M.D.
 Anthony J. Pisciotta, M.D.
 Anthony V. Porcelli, M.D.
 Naomi L. Turner, M.D.

Associate Rehabilitation Physicians
 Alfred Hess, M.D.
 John J. Kraus, M.D.
 Howard Liss, M.D.

Assistant Rehabilitation Physicians
 Jose Alonso, M.D.
 Michael V. Canale, M.D.
 Donald Liss, M.D.

Surgery

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 Norman E. Hugo, M.D.
 Thomas C. King, M.D.
 Paul Lo Gerfo, M.D.
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Associate
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 Carl R. Feind, M.D.
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 Sven J. Kister, M.D.
 Roman Nowygrod, M.D.
 George C. Peck, M.D.
 John N. Schullinger, M.D.
 Francis C. Symonds, M.D.

Assistant
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 Arthur Cooper, M.D.
 Alison Estabrook, M.D.
 Rajinder P. Gandhi, M.D.
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 Paul H. Gerst, M.D.
 Leif O. Holgerson, M.D.
 Peter S. Liebert, M.D.
 Eric A. Rose, M.D.
 Craig R. Smith, M.D.
 Michael C. Stalnecker, M.D.
 Charles J. Stolar, M.D.
 George J. Todd, M.D.
 Michael R. Treat, M.D.
 Collin J. Weber, M.D.

Assistant Surgeon
 Paul M. Starker, M.D.

Urology

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Attending Urologist
 Ralph J. Veenema, M.D.

Associate
Attending Urologists
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 Stanley B. Braham, M.D.
 Terry W. Hensle, M.D.

Frank W. Longo, M.D.
 Harris M. Nagler, M.D.
 Peter J. Puchner, M.D.
 Myron S. Roberts, M.D.
 Nicholas A. Romas, M.D.

Assistant Attending Urologists
 Mitchell C. Benson, M.D.
 John D. Birkhoff, M.D.
 Kevin A. Burbige, M.D.
 Peter N. DeSanctis, M.D.
 J. Timothy Donovan, M.D.
 Ihor Sawczuk, M.D.
 Michael H. Wechsler, M.D.

Associate Urologist
 Leonard J. Rudin, M.D.

Assistant Urologists
 Luis M. Abreu, M.D.
 Richard Kroll, M.D.

Chiefs of Clinic
 Leonard Brand, M.D.
 (Pain Clinic) Anesthesiology
 Howard Rosner, M.D.
 Co-Chief (Pain Clinic)
 Anesthesiology
 Donald C. Brody, M.D.
 (General Clinic) Anesthesiology
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 Medicine
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This Annual Report is in two parts. The second part will contain the academic roster of Columbia University Health Sciences Faculty and the list of faculty publications.



0050075870

Prepared by the Office of Professional Communications, Columbia University, Mae Rudolph, Director, and the Public Interest Department, The Presbyterian Hospital, Richard Zucker, Director, Susan Parker, Assistant Director.

*Graphic design by Tanya Krawciw
Design assistant, Joan Datré*

*Cover and inside photos: René Perez
Photo: p. 4—Newsday/Jim Cummins*

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